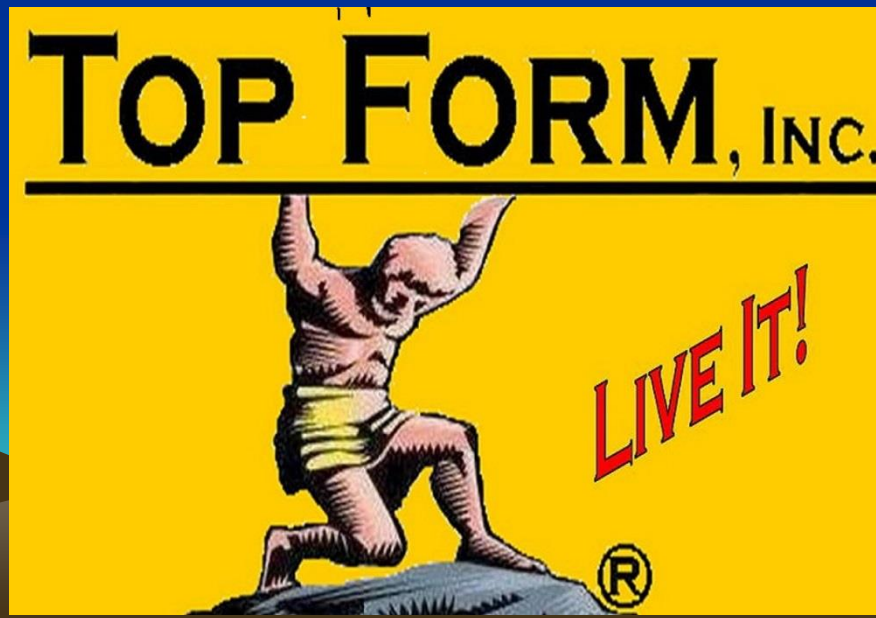




Trends in Warm-up & Stretching



Housekeeping

- Bathrooms
- Snacks
- Breaks
- Questions



Warm-up

- A period of time preceding competition or event meant to prepare an athletes body for the upcoming activity by stimulating physiologic changes
- Core Temperature
- Peripheral bloodflow
- Local mm Temp.
- Increased O₂ uptake
- Flush Lactic Acid & increase pH
- Increased Nerve Impulse speed (1)



STRETCHING

- A method of elongating muscle and soft tissue to improve flexibility and joint range of motion. Stretching was traditionally thought to make athletes less prone to injury.
- Static stretching: Passive/Manual
- : Active
- : PNF Stretches
- Dynamic



Static Stretching Applications

- Effective for lasting improvements of soft tissue elasticity, flexibility and range of motion
- Enhances POST competition recovery by stimulating bloodflow to specific targets
- Used in injury rehab to influence scar tissue alignment
- Guidelines: Static, PNF





Recent Implications

- Stretching prior to a workout may be detrimental. Less stiffness in the Muscle-Tendon Unit (MTU) may reduce power output and force production.
- Applicable studies:
 1. Vertical Jump Heights decreased after stretching (3).
 2. Reduced 1RM strength of isolated Quads and Hams in men & women in stretching groups vs. non stretching group! (4)
 3. Various studies show impaired Isometric force output after stretching
 4. Golf Club head speed, driving distance & accuracy affected!!

Current Trends

- Dynamic Stretching: Incorporates functional positions with movement and active warm up techniques.
- Examples: Heel walking to stretch Calf mms, Exaggerated “Heel-to-Butt” Run for Quads; Forward walking lunges “incorporate dynamic stretches of multiple muscles along various points of the Kinetic Chain bilaterally”
- Injury rates for a softball team were statistically lower vs another team on a static stretching program (5).



FURTHERMORE.....

- Warm up period should be minimum 5 minutes, up to 10-15 minutes including dynamic stretching and sport specific techniques such as shuttle runs, Box drills, medicine ball work (ie; squats, chest passes), low intensity, low volume plyometric jumps, jump rope, etc.
- Ballistic stretching still considered unsafe



DEMO'S

- Static to Pecs for GH ER
- PNF to Pecs for GH ER
- Static to Hams (increase Knee extension or Hip Flexion ie; stride length)
- PNF to Hams
- Passive Lumbar Extension



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- 5. The Impact of a dynamic and Static Flexibility Program on Range of Motion and Injury. Eastern Athletic Trainers Conference, 1999. Mann, DP and Jones, MT.
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CORE STRENGTHENING

- Core = Mid Section. Muscles Include: Ext/Int Obliques, Intercostals, Deep Lumbar mms ie; Multifidus, Rotatores, Intertransversari; Erector Spinae, Transverse Abdominus, Rectus Abdominus. Other regional mms involved: Quadratus Lumborum, Gluteals, other Pelvic mms.



CORE STRENGTHENING cont.

- Multiple methodologies, 2 Principles
 1. Slow Twitch MM Fibers (Postural)
 2. Sport Specificity
- Foundation: Basic Three + Low Back
 1. DLR
 2. Oblique Crunch
 3. Stabilized CrunchBack Extension on bench
- Teach High Reps, Slow speed 4-6 weeks.
- Add SS movements ie; Medicine ball
- Progression Abdominal high chair, Bar hangs



Examples

- Cable/Tubing/Band Rotations
- Planks w/ isometric holds for stabilization
- Video
- Handouts



Strength Training Basics

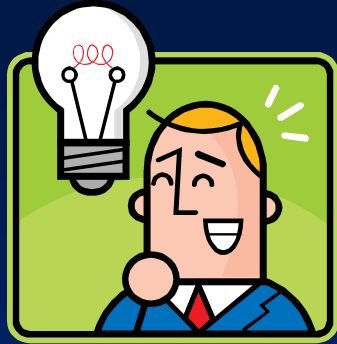


- “The ACSM recommends lifting a resistance of at least 65% of one’s 1 Repetition Maximum (RM) for 6-12 repetitions to achieve muscle hypertrophy under normal conditions. It is believed anything below this intensity rarely produces substantial muscle hypertrophy or strength gains.”

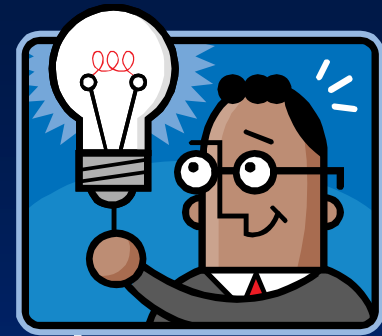
Strength cont.dif sports



- Avoid 1 RMs in Adolescents and novice lifters
- Initial gains in ability to move increasing amounts of resistance within first 4 weeks usually Neuromuscular adaptations ie; Learning, Coordination, improved Motor unit recruitment.
- A Continuum exists with a 3 x 10 program consistent w/ strength gains.
- Starter programs can be 1-3 sets, 6-12 reps.
- Joe Weider's "Pyramid Principle".
- Rest Periods based upon % 1RM, > = >rest
- 30 seconds light loads, 1-2 minutes heavy



“Some Good Ideas”



- Pre-lifting Rotator Cuff (RTC) strength exs.
- (Can be incorporated as part of warm up ie; 5 min dynamic warm up, f/by RTC exs)
- 1 light set of lift to be performed
- Watch Body Mechanics when lifting plates/DBs
- Periodization: ~ every 6 weeks to apply new stimulus to neuromuscular system and prevent adaptation (Plateau)

A Starting Point

- Training the Lifts and Developing a Strength Routine (Video)
- **EVERYONE SHOULD LIFT WEIGHTS AS PART OF THEIR TRAINING**



A Total Program

- A. 5-10 Minute Dynamic Warm-Up
- B. Rotator Cuff Exs.
- C. Lifting: 1-3 sets, 6-12 Reps, Progress from 65% 1RM to 75-80%
- D. Core Exercises: Basic Three (Pick your Favorite Variations, Possibilities are endless). Minimize Rest Periods



MOVES Safety, spotting

1. Deadlift
2. Shrugs
3. Upright Rows (Triple Extension Position)
4. Front Squats/Back Squats
5. bench
6. Bent Over Rows
7. Standing Shoulder Press
8. Snatches, Jerk Presses w/ Bars

Cleans, squats



THE END



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